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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/192,651	11/16/1998	TIMOTHY W. FUEHRER	2-9-24-11	1068

7590 03/11/2004

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EXAMINER

SINGH, RAMNANDAN P

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 03/11/2004

23

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/192,651

Applicant(s)

FUEHRER ET AL.

Examiner

Ramnandan Singh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 15, 16, 18 and 19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15-16, 18-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on 22 December 2003 have been fully considered but they are not persuasive.

(i) Applicant's argument—"None of the references cited by the Examiner teach or suggest a driver circuit, such as a charge pump, which doubles the voltage of a clock signal provided by the driver circuit to thus increase the voltage available for use by a DAA and regenerate the clock signal so that it is also available to perform its clocking function" on page 4.

Examiner's response---The Examiner respectfully disagrees and directs the Applicants to Luscher, Jr. [US 5,600,551] which is one of the references cited by the Examiner for rejection. Luscher, Jr. teaches a charge pump for doubling the voltage of a clock signal for use with a capacitive isolation barrier [Fig. 1; col. 1, lines 30-37; Fig. 7; col. 6, line 32 to col. 10, line 48; col. 1, lines 52-67; col. 2, lines 1-52; Fig. 10]. It is, nevertheless, a teaching to one of ordinary skill in the art so that one can apply the Luscher's technique to other applications.

(ii) Applicant's argument—" For the Examiner's rejection to be appropriate, there must be some suggestion in Scott of doubling the voltage of the clock signal, albeit in a different manner than done the claimed invention; only then is it appropriate to

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substitute the doubling method as alleged by Luscher with whatever doubling method is taught in Scott" on page 4.

Examiner's response---In response to the Applicant's argument, the Examiner respectfully directs the Applicant to MPEP 2143. The relevant portion of MPEP 2143 is cited as follows:

"To establish a prima face case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation , either in the references themselves or in the knowledge generally available to one of the ordinary skill in the art, to modify the reference or to combine reference teachings."

Clearly, the Applicant's argument is NOT valid, because the suggestion or motivation may be either in Scott or Luscher.

Further, in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Luscher, Jr. suggests transmitting more power from the powered side of the DAA to the phone line side of the isolation barrier through the barrier capacitors so that the load can receive more power [Luscher, Jr. col. 10, lines 33-48].

(iii) Applicant's argument—"Without such a suggestion, The Examiner has merely used impermissible hindsight to make the present rejection" on page 5.

Examiner's response---In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Further, in response to the Applicant's argument about doubling the voltage, the Examiner's response is as follows: The active diode bridge 710, as shown in Fig. 7 of Scott et al, functions as a charge pump to increase the voltage of a clock signal provided by the driver circuit. However, no details regarding the quantity of the voltage increase by the active diode bridge 710 are shown. So one of ordinary skill in the art would have been motivated to seek any known circuit suitable to receive a dual digital input and recover power therefrom, such as Luscher, Jr, which inherently pumps charge onto capacitors C3 and C4 to double the voltage.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-13, 15-16 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott et al [US 6,385,235 B1] in view of Luscher, Jr. [US 5,600,551].

Regarding claims 1, 7 and 8, Scott et al teaches a digital direct access arrangement (DAA) 110Q shown in Fig. 16 including phone line side circuitry 118, an isolation barrier 120, and powered side circuitry 116, wherein the powered side circuitry 116 may be connected to external controllers, such as digital signal processor (DSP), that may be a part of a communication device, such as phone or modem [Figs. 16, 18; col. 4, line 61 to col. 5, line 12; col. 21, lines 30-43; col. 24, lines 14-36]. Based on the DAA, Fig. 7 presents a fully differential bi-directional interface [Fig. 6B; col. 13, lines 18-28] for a communication system comprising powered side circuitry having a driver 703; a clock generator 704; and the other side of the isolation barrier having a driver 713; and a clock regeneration element 707. Scott et al also discloses an active diode bridge 710 (i.e. **charge pump**) which recovers power from the driver and supplies it to the clock regeneration element 707. [Fig. 6B; col. 6, lines 33-36; col. 8, lines 46-50; col. 14, line 6 to col. 15, line 15; Figs. 7, 8; col. 15, line 34 to col. 18, line 12].

Further, in response to the Applicant's argument about doubling the voltage, the Examiner's response is as follows: The active diode bridge 710, as shown in Fig. 7, functions as a charge pump to increase the voltage of a clock signal provided by the driver circuit. However, no details regarding the quantity of the voltage increase by the active diode bridge 710 are shown. So one of ordinary skill in the art would have been motivated to seek any known circuit suitable to receive a dual digital input and recover power therefrom, such as Luscher, Jr, which inherently pumps charge onto capacitors C3 and C4 to double the voltage.

Scott et al does not teach expressly doubling the voltage of a clock signal.

Luscher, Jr. teaches a charge pump for doubling the voltage of a clock signal for use with a capacitive isolation barrier [Fig. 1; col. 1, lines 30-37; Fig. 7; col. 6, line 32 to col. 10, line 48; col. 1, lines 52-67; col. 2, lines 1-52; Fig. 10]. It is nevertheless a teaching to one of ordinary skill in the art.

Scott et al and Luscher, Jr. are analogous art because they are from a similar problem solving area, viz., communications with a DAA system.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to use the voltage doubler of Luscher, Jr. to replace the active diode bridge 710 of Scott et al.

The suggestion/motivation for doing so would have been to transmit more power from the powered side of the DAA to the phone line side of the isolation barrier through the barrier capacitors so that the telephone equipment (i.e. load) can receive more power [Luscher, Jr. col. 10, lines 33-48].

Regarding claims 2 and 9, Luscher, Jr. teaches the charge pump, as shown in Fig. 7, comprising a first capacitive element C1 having an input side connected to the DSP and an output side to the DAA; a second capacitive element C4 having an input and an output each connected to the DAA; and a rectifying diode D2 doubling the voltage of the clock [col. 6, lines 24-30].

Regarding claims 3-4 and 10-11, Luscher, Jr. teaches a charge pump as shown in Fig. 7 with square-pulses having opposite polarities 10a; and a diode rectifier D2.

Regarding claims 5 and 12, Scott et al teaches the clock regeneration element 707 connected in parallel with diode bridge 710 [Fig. 6B; col. 14, lines 23-41], which is to be replaced with the voltage double of Luscher, Jr. as shown above.

Regarding claims 6 and 13, Luscher, Jr. teaches the charge pump, as shown in Fig. 7, with a storage capacitor C4 [col. 6, lines 58-62; col. 7, lines 13-37; col. 8, lines 4-14].

Regarding claims 15-16 and 18-19, Scott et al teaches, in preferred embodiments, a first capacitive element 705, wherein the capacitor has a capacitance on the order of 100 pF [col. 11, line 60 to col. 12, line 11].

Conclusion

4. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

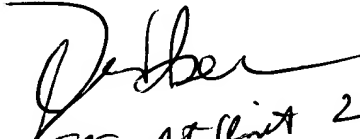
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramnandan Singh whose telephone number is (703)308-6270. The examiner can normally be reached on M-F(8:00-4:30).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester Isen can be reached on (703)-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ramnandan Singh
Examiner
Art Unit 2644



SRB, Art Unit 2644